

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/756,993 Confirmation No.: 3726
Applicant(s): Pompei
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Art Unit: 2837
Examiner: Jeremy Austin Luks
Title: A SOUNDPROOFING PANEL

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AMENDED APPEAL BRIEF UNDER 37 CFR § 41.37

This is an appeal from the Final Rejection of claim 1 – 16, which are all of the pending claims. This Amended Appeal Brief is filed in response to the Notification of Non-Compliant Appeal Brief mailed June 18, 2007 and pursuant to the “Notice of Appeal to the Board of Patent Appeals and Interferences” filed March 26, 2007.

1. ***Real Party in Interest.***

The real party in interest in this appeal is Hutchinson, a French corporation, the assignee of the above-referenced patent application.

2. ***Related Appeals and Interferences.***

There are no related appeals and/or interferences involving this application or its subject matter.

3. ***Status of Claims.***

Claims 1 – 16 stand rejected in a Final Rejection dated October 30, 2006.

4. ***Status of Amendments.***

As indicated in an Advisory Action mailed February 27, 2007, the Amendment After Final filed February 15, 2007 will be entered upon the filing of an appeal.

5. ***Summary of Claimed Subject Matter.***

The present invention relates to a soundproofing panel. In the embodiment illustrated in Fig. 1, the soundproofing panel comprises a first wall (exciter wall, indicated by reference number 1) that is positioned in contact with a fluid in which there is a source of noise (6 in Fig. 1) and a second wall (receiver wall 2 in Fig. 1) positioned in contact with a fluid where it is desired for the noise to be attenuated (7 in Fig. 1). Additionally, there is an intermediate element (shown in Fig. 1 as the sheet or plate 3) disposed between these two walls. This is described at page 3 line 33 to page 4, line 16 of the specification.

The present invention is based on the idea of suspending the intermediate element elastically from the second wall (receiver wall 2). Thus, as recited in Claim 1, the intermediate element comprises over at least a portion of its outline at least one element providing elastic coupling between the intermediate element and only the second wall. As shown in Fig. 1, the sheet or plate 3 is suspended from the second wall 2 by one or more flexible links or studs 8. As noted in the specification (see page 2 lines to 36), this provides two advantages. First, the intermediate element is not linked directly to the second wall (receiver wall) thereby improving performance. Secondly, the intermediate element in association with the first wall (exciter wall) constitutes a system of two suspended masses which present a better filtering effect.

Claim 1 further recites a first layer of a compressible sound-absorbing material between the first wall (1) and the intermediate element (3). In Fig. 1 the layer of sound absorbing material is indicated by reference character 4.

6. ***Grounds of Rejection to be Reviewed on Appeal.***

Whether claims 1-16 are unpatentable under 35 U.S.C. 103(a) over Soderquist US 4,317,503 in view of L'Heureux US 4,924,969 and McNett US 6,123,171.

7. ***Argument.***

The Rejection

Claims 1 to 16 stand rejected under 35 USC 103(a) based upon the combination of three prior art references, Söderquist US Pat. 4,924,969 in view of L'Heureux US Pat. 4,924,969 and

McNett US Pat. 6,123,171. According to the rejection, Söderquist teaches a soundproofing panel comprising a first wall (2) in contact with a fluid containing a source of noise and a second wall (7) in contact with a fluid in which the noise is to be attenuated. The panel further comprises at least one intermediate element (5) between the two walls (2, 7), the intermediate element (5) comprising over at least a portion of its outline at least one element (9) providing coupling between the intermediate element (5) and only the second wall (7). Soderquist further has a first layer of a material (10) between the first wall (2) and the intermediate element (7).

The Examiner acknowledges that Söderquist fails to teach an element that provides elastic coupling. However the Examiner notes that L'Heureux teaches an element that provides elastic coupling and the Examiner contends that it would have been obvious to combine the Söderquist and L'Heureux structures to improve performance and sound absorption. As for the last phrase in Claim 1, requiring a first layer of compressible sound absorbing material between the first wall and the intermediate element, the Examiner relies upon the McNett reference, which teaches a first layer of compressible sound-absorbing material (16 in Fig. 1). The Examiner asserts that it would be obvious to further modify the Söderquist/L'Heureux modified structure in view of McNett to further dampen sound in the panel.

The Rejection Fails to Establish a Prima Facie Case of Obviousness

Applicant respectfully submits that the present invention would not have been *prima facie* obvious in light of the cited references. As the standard for assessing obviousness, MPEP 706.02(j) lists the requirements for establishing a *prima facie* case of obviousness under 35 U.S.C. § 103:

First, there must be some suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings to arrive at the claimed invention. In the recent *KSR Int'l Co. v. Teleflex, Inc.* decision, the Supreme Court underscored the importance that the analysis supporting an obviousness rejection should make explicit the reasons for combining the known elements of the prior art in the manner claimed in the patent at issue.

Second, there must be a reasonable expectation of success. The teaching or suggestion to make the combination of references and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

Finally, the prior art references must teach or suggest all of the claim limitations.

As will be explained more fully below, these requirements for establishing a *prima facie* case of obviousness has not been established. Therefore, the rejection is improper and should be reversed by the Board.

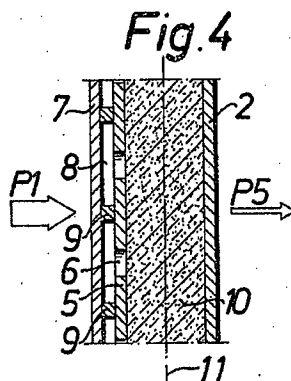
There is no motivation to modify the references and no expectation of success

The modification of the prior art as proposed in the Final Rejection is not motivated by any teachings in the references themselves, nor is motivation found within the general knowledge of one of ordinary skill in the art. Moreover, the only apparent basis for this modification is a hindsight reconstruction of the prior art in view of Applicant's own teachings. This is clearly improper.

As stated at page 1 of applicant's specification, the present invention is based on the idea of suspending the intermediate wall elastically from the receiver wall, i.e. the wall located on the side where the sound is to be attenuated. This inventive concept is not taught or suggested by the primary reference, Söderquist

According to the rejection, Söderquist teaches in Figure 6 a soundproofing panel comprising a first wall 2 in contact with a fluid containing a source of noise, a second wall 7 in contact with a fluid in which the noise is to be attenuated and an intermediate element 5 between the first wall 2 and second wall 2. The intermediate element 5 comprises over at least a portion of its outline at least one element 9 providing coupling between the intermediate element and only the second wall. Söderquist also has a first layer of material 10 between the first wall and the intermediate element 5.

The Söderquist panel does not have the orientation defined by Applicant's claims. As seen in Figure 4, reproduced below as indicated by the arrows P1 and P5, it is the second wall 7 that is in contact with the source of noise and the first wall 2 is on the side where the noise to be attenuated.



The Examiner contends that there is no structural difference between the panel of claim 1 and the cited prior art. However, this is clearly incorrect. Claim 1 positively recites a first wall positioned in contact with a fluid containing a source of noise and a second wall positioned in contact with a fluid in which the noise is to be attenuated. The opposite is shown by Söderquist. This recitation in claim 1 is not merely an intended use as asserted by the Examiner; but instead this recitation structurally defines a particular orientation for the soundproofing panel in its environment. Applicant's soundproofing panel is an asymmetric structure and it must be implemented in a particular orientation to be effective.

The Examiner contends further that this difference is inconsequential since rearranging parts of an invention involves only routine skill in the art, citing *In re Japikse* 86 USPQ 70. However, the Examiner has failed to give any plausible reasons why one of ordinary skill in the art would be motivated to rearrange the parts of the Söderquist panel. In order to perform its intended function, the elements of the Söderquist panel are arranged in a particular way. No reason has been given why one of skill in the art would want to rearrange these parts. The facts of *In re Japiske* involved modifying the position of a starting switch on a hydraulic power press, where this modification would not have modified the operation of the device. That is not the case with the present invention, where the elements are arranged in a specific way for functionality and their rearrangement would have a significant affect on the sound attenuation characteristics of the panel.

The Examiner recognizes that the Söderquist structure does not have an element providing elastic coupling, but he finds this element in L'Heureux in the form of a strip 12.

However, nothing in the Söderquist reference or the L'Heureux reference provides any reason or motivation for the person of ordinary skill in the art to "pluck" the elastic element 12 from L'Heureux structure and to insert it into the Söderquist structure. Furthermore, nothing in either of these references would lead the person of ordinary skill in the art to utilize the elastic strip in such a way as to provide elastic coupling between the intermediate element 5 of Söderquist and only the second wall of Söderquist.

Considering the L'Heureux reference more closely, it will be seen that it also fails to teach the basic inventive concept of the present invention as described above. The purpose of the elastic strip 12 in the L'Heureux structure is to isolate one wall of an acoustic door from a frame to which that wall is mounted. In particular, the door has a first wall that includes a first panel 4 of gypsum clad on opposite sides by a sheet 5 of lead and a sheet 6 of steel. The opposite wall of the door is constituted by a panel 9 of gypsum to which is applied a sheet 10 of lead and a sheet 11 of steel. The second wall of the door, made up of panel 9 and sheets 10 and 11, is mounted in a frame by means of a strip 12 made of a flexible material. In this way, the second wall is acoustically isolated from the first wall of the door. Thus, applicant's concept of suspending an intermediate wall elastically from a receiver wall can not be found in the teachings of L'Heureux. Nothing in L'Heureux alone or in combination with Söderquist would direct a person of ordinary skill in the art to provide elastic coupling between the intermediate member 5 of Söderquist and the second wall. Nor is this concept taught by the other reference relied upon in the rejection, McNett

The McNett reference has been introduced in view of the recitation in Claim 1 of a first layer of compressible sound absorbing material between the first wall and the intermediate element. The Examiner contends that it would have been obvious to use McNett's sound absorbing material 16 in the modified Söderquist structure to further dampen sound.

Applicant submits that this further modification of the Söderquist structure amounts to a major redesign of Söderquist's original invention and is inconsistent with the design concepts he employed. Following the rationale of the rejection, first, one must insert at least one element providing elastic coupling between the intermediate element 6 and the second wall, which according to the rejection, is wall 7. The rejection does not specify whether this elastic element

is provided in lieu of or in addition to the spacers 9. Second, one must add a first layer of compressible sound-absorbing material between the first wall and the intermediate element. The rejection does not explain how the prior art teaches where to locate this additional layer of compressible sound-absorbing material. The McNett or Söderquist references are devoid of any teaching that would direct the person of skill in the art to locate the layer 16 of sound absorbing material in this particular location. The rejection is clearly flawed in this respect for lacking the requisite motivation.

The rejection is further flawed in that this modification is inconsistent with the design concepts employed in the Söderquist structure. Thus, there is no expectation of success. In this regard, the functionality of the Söderquist invention relies upon having two masses corresponding to the sheets 2 and 7 interconnected by a first spring corresponding to the air in the air gap 8 and a second spring corresponding to the air in the inner element 10. See column 4, lines 23 to 43. The Examiner's proposed modification, as understood, introduces additional elements which would alter basic resonance frequency of the system designed by Söderquist.

Thus, it should be evident that the motivation for the modifications to the Söderquist structure is not grounded in the teachings of the references themselves and the combination of Söderquist, L'Heureux and McNett fails to establish a prima facie case of obviousness with respect to the subject matter of independent claim 1.

The Dependent Claims Are Independently Patentable

The dependent claims are also patentable for the reasons given above. In addition, these claims present further independent reasons why they are non-obvious from the prior art. Claim 3, for example, specifies that the intermediate element is constituted by a rigid or semi-rigid intermediate plate (3 in applicant's Fig. 1) interposed between a first layer and a second layer of sound-absorbing material (4 and 5 in Fig. 1), and this assembly is sandwiched between the previously mentioned first and second walls (1, 2) that form opposite sides of the soundproofing panel.

In the rejection the Examiner acknowledges that this is not taught by Söderquist, but contends that it is obvious from the combination of Söderquist with L'Heureux. The Examiner

notes that L'Heureux teaches two layers of sound absorbing material (7 and 8 in Fig. 1) surrounding an intermediate area (3). When used in combination with Söderquist, the assembly is constituted by the intermediate plate (5) of Söderquist and the two layers of sound-absorbing material (7) in Fig. 1) taken from L'Heureux. The motivation asserted by the Examiner for this modification is to improve performance and sound absorption/filtering of the structure.

Applicant submits that there is no proper motivation provided for this modification. No reason or technical explanation is given why this modification would be expected to improve the performance and sound absorption/filtering of the structure. The modification could just as easily make the performance of the structure inferior. It further alters the basic resonance frequency of the system.

Beyond this flaw, the convoluted logic for making the proposed modification disregards the reasons why the Söderquist panel and the L'Heureux door are structured the way they are in the first place. As noted earlier, the functionality of the Söderquist structure relies upon having two masses corresponding to the sheets 2 and 7 interconnected by a first spring corresponding to the air in the air gap 8 and a second spring corresponding to the air in the inner element 10. See column 4, lines 23 to 43. Adding the two layers of L'Heureux's sound absorbing material (7, 8) on opposite sides of the panel 5 of Söderquist would result in filling in the air space 8 that Söderquist considers essential.

Further, it should be noted that the two layers (7, 8) of L'Heureux's sound absorbing material are not located on opposite sides of a rigid panel as is specified in claim 3. Rather the "intermediate area (3)" referred to by the Examiner is in fact an air space, not a panel. Its purpose is to further isolate the front and rear panels acoustically. This air space is eliminated altogether in the Examiner's proposed modification.

Applicants also find it impossible to comprehend how L'Heureux's teaching of two layers (7, 8) of sound absorbing material located with an air space (3) therebetween would incite a person of ordinary skill in the art to take the two layers (7, 8) from the L'Heureux structure, eliminate the air space (3) and instead to place these two layers on opposite sides of the intermediate panel 5 of Söderquist. Applicant submits that the convoluted reasoning for this modification (and the necessity to disregard the reasons why Söderquist and L'Heureux are

structured as they are in the first place) clearly reveals that the motivation for the modification of Söderquist and L'Heureux arises not from the reference teachings but instead from a hindsight reliance upon applicant's own disclosure. The Examiner is simply cobbling together elements of the prior art in an effort to arrive at the structure defined in claim 3.

Turning now to claim 4, this claim further defines the at least one flexible element as being a suspension stud (8 in Fig 1) made of a flexible elastomer material and claim 5 specifies that the suspension studs are distributed along the periphery of the intermediate sheet, as can be clearly seen in Fig 2. The Examiner acknowledges that Söderquist does not teach flexible elements made of a flexible elastomer material, but again relies upon L'Heureux for this teaching. However, L'Heureux simply discloses a strip 12 of elastomer material. There is no teaching of a suspension stud of flexible elastomer material as specified in claim 4 or a plurality of suspension studs distributed along the periphery of the intermediate sheet as in claim 5.

Claim 7 recites an additional element, a rigid frame, secured to the second wall and wherein at least one flexible element is disposed between the frame and the intermediate element. Söderquist does not have a rigid frame, as noted by the Examiner. The rejection, however, fails to even mention a rigid frame, or to show why one of ordinary skill in the art would have been motivated to install a rigid frame on the Söderquist structure or which wall to secure it to. Likewise, there is no apparent motivation to position at least one flexible element between the frame and the intermediate element 5 of Söderquist. Claims 8 – 9 and 11 – 16 have the same basic flaws owing to their dependency from claim 7.

The particular locations as specified in claims 8 and 9 are not found anywhere in the cited references and no motivation is present for modifying Söderquist to arrive at the structure claimed.

Unlike claim 7, claim 10 specifies a rigid frame secured to the intermediate sheet and wherein at least one said flexible element is fixed between the frame and the receiver wall. According to the rejection, the Examiner views element 10 in Fig. 6 (presumably 10') as the frame and the support element 9 (although not flexible) between the frame 10' and the second wall 7. This claim, which is dependent from claim 3, is also burdened with the logic flaws

described above with respect to claim 3. Additionally, the element 10' of Söderquist is not a frame, but rather, a honeycomb structure.

Claim 11 specifies that at least one flexible element is a flexible wall made up of one or more segments. The rejection identifies the flexible strip 12 of L'Heureux as corresponding to the claimed flexible element. Applicants can find no teaching in L'Heureux that the strip 12 is a flexible wall made up of segments.

Conclusion

Applicant has clearly shown that the requirements for establishing a *prime facie* case of obviousness under 35 U.S.C. §103 have not been met. Accordingly, the obviousness rejection should be reversed.

Respectfully submitted,



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8. ***Claims Appendix.***

The claims currently on appeal are as follows:

1. A soundproofing panel comprising a first wall positioned in contact with a fluid containing a source of noise and a second wall positioned in contact with a fluid in which the noise is to be attenuated, the panel further comprising at least one intermediate element between said first and second walls and wherein the intermediate element comprises over at least a portion of its outline at least one element providing elastic coupling between the intermediate element and only the second wall, and a first layer of a compressible sound-absorbing material between said first wall and said intermediate element.

2. A panel according to claim 1, wherein said at least one element providing elastic coupling is situated only over the outline of the intermediate element or over at least a portion of said outline.

3. A panel according to claim 1, wherein the intermediate element is constituted by a rigid or semi-rigid intermediate plate interposed between a first layer and a second layer of sound-absorbing material, the assembly constituted by the intermediate plate and the two layers of sound-absorbing material being sandwiched between said first and second walls.

4. A panel according to claim 1, wherein at least one flexible element is a suspension stud made of flexible elastomer material.

5. A panel according to claim 4, including a plurality of suspension studs distributed along the periphery of the intermediate sheet.

6. A panel according to claim 3, wherein at least one flexible element is a strip of flexible elastomer material.

7. A panel according to claim 1, including a rigid frame secured to said second wall and wherein at least one flexible element is disposed between the frame and the intermediate element.

8. A panel according to claim 7, wherein at least one said flexible element is interposed between the frame and the intermediate element.

9. A panel according to claim 7, wherein at least one said flexible element is fixed between the inner outline of an opening in the frame and the periphery of the intermediate element.

10. A panel according to claim 3, including a rigid frame secured to the intermediate sheet, and wherein at least one said flexible element is fixed between the frame and the receiver wall.

11. A panel according to claim 7, wherein at least one flexible element is a flexible wall made up of one or more segments.

12. A panel according to claim 7, wherein the rigid frame is a cellular array of the honeycomb type presenting an array of cells, in particular hexagonal cells, sandwiched between two rigid plates.

13. A panel according to claim 7, wherein the rigid frame defines an internal cavity which is filled at least in part with soundproofing material.

14. A panel according to claim 7, wherein the rigid frame presents one or more openings, and wherein the panel includes an intermediate element covering at least the outer outline of the rigid frame.

15. A panel according to claim 7, wherein the rigid frame presents a plurality of openings, and wherein the panel comprises a plurality of intermediate elements, each covering one or more openings of the rigid frame.

16. A panel according to claim 14, wherein at least one said opening is filled with sound-absorbing material.

Evidence Appendix.

None.

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Related Proceedings Appendix.

None.